AMENDMENTS

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Original) An optoelectronic transceiver, comprising:

a first controller integrated circuit (IC) and a second controller IC, each comprising:
logic;
a memory configured to store digital diagnostic data, where at least some of said digital diagnostic data is common to both said first controller IC and said second controller IC;
an interface electrically coupled to said memory and configured for communicating said diagnostic data to a host external to said optoelectronic transceiver; and
at least one input port electrically coupled to said memory and configured to receive said diagnostic data from other components within said optoelectronic transceiver.

2. (Original) The optoelectronic transceiver of claim 1, wherein said interface is a serial interface.

3. (Original) The optoelectronic transceiver of claim 2, wherein said serial interface is selected from a group consisting of an I2C serial interface, a 2Wire serial interface, and an MDIO serial interface.

4. (Original) The optoelectronic transceiver of claim 1, wherein said other components are selected from a group consisting of at least one of a Transmitter Optical Subassembly (TOSA), Receiver Optical Subassembly (ROSA), laser driver IC, a post amplifier IC, an Avalanche Photodiode (APD) power supply, a Thermoelectric Cooler (TEC) driver IC, and a power controller IC.

5. (Original) The optoelectronic transceiver of claim 1, further comprising additional components selected from a group consisting of: a Transmitter Optical Subassembly (TOSA), a Receiver Optical Subassembly (ROSA), a laser driver, a post amplifier, an Avalanche Photodiode (APD) power supply, a Thermoelectric Cooler (TEC) driver, a power controller, a pre-amplifier, a laser wavelength controller, an analog-to-digital converter, a digital-to analog converter, or any combination of the aforementioned components.

6. (Original) The optoelectronic transceiver of claim 1, wherein said diagnostic data is stored in different memory mapped locations in said first controller IC and in said second controller IC.

7. (Original) The optoelectronic transceiver of claim 1, wherein said at least one output port of said first controller IC is electrically coupled to: an Avalanche Photodiode (APD) power supply to supply an APD control signal; and a laser driver IC to supply a direct current (DC) bias control signal.

8. (Original) The optoelectronic transceiver of claim 1, wherein said at least one output port of said second controller IC is electrically coupled to: a laser driver IC to provide an alternating current (AC) control signal; and a Thermoelectric Cooler (TEC) driver IC to supply a TEC control signal.

9. (Currently Amended) The optoelectronic transceiver of claim ~~7~~ 8, wherein said second controller IC provides said AC control signal to said laser driver IC via a digital to analog converter.

10. (Currently Amended) The optoelectronic transceiver of claim 1, wherein said first controller IC further comprises at least one input port electrically coupled to: an Avalanche Photodiode (APD) power supply to receive a photodiode monitor signal; a post amplifier IC to receive a loss of received power (RxLOS) signal; and a laser driver IC to receive a direct current (DC) bias monitor signal and a laser diode monitor signal.

11. (Original) The optoelectronic transceiver of claim 1, wherein said second controller IC further comprises at least one input port electrically coupled to: an Avalanche Photodiode (APD) power supply to receive a photodiode monitor signal; a laser driver IC to receive a direct current (DC) bias monitor signal and a laser diode monitor signal; and a Thermoelectric Cooler (TEC) driver IC to receive a TEC temperature signal.

12. (Canceled)

13. (Original) The optoelectronic transceiver of claim 1, wherein said second controller IC is electrically coupled to a thermistor disposed within said optoelectronic transceiver.

14. (Original) The optoelectronic transceiver of claim 1, wherein said first and second controller ICs are electrically coupled to a power source.

15. (Original) The optoelectronic transceiver of claim 1, wherein said first controller IC is configured to control direct current (DC) bias current supplied to a Transmitter Optical Subassembly (TOSA).

16. (Original) The optoelectronic transceiver of claim 1, wherein said first controller IC is configured to control Avalanche Photodiode (APD) power supplied to a Receiver Optical Subassembly (ROSA).

17. (Original) The optoelectronic transceiver of claim 1, wherein said second controller IC is configured to control alternating current (AC) current supplied to a Transmitter Optical Subassembly (TOSA).

18. (Original) The optoelectronic transceiver of claim 1, wherein said second controller IC is configured control a Thermoelectric Cooler (TEC) in a Transmitter Optical Subassembly (TOSA).

19. (Original) The optoelectronic transceiver of claim 1, wherein the logic of said first controller IC includes a plurality of state machines and the logic of said second controller IC includes a processor that executes stored programs.

20. (Currently Amended) An optoelectronic transceiver comprising:

an optoelectronic transmitter;

an optoelectronic receiver;

a laser driver electrically coupled to said optoelectronic transmitter;

a post amplifier electrically coupled to said optoelectronic receiver;

a first controller integrated circuit (IC) electrically coupled to said laser driver, where said first controller IC is configured to supply a direct current (DC) bias current control signal to said laser driver causing said laser driver to supply DC bias current <u>having a predetermined level determined by the DC bias current control signal</u> to said optoelectronic transmitter;

a second controller IC electrically coupled to said laser driver to supply an alternating current (AC) current control signal to said laser driver causing said laser driver to supply AC

current having a predetermined level determined by the AC current control signal to said optoelectronic transmitter.

21. (Original) The optoelectronic transceiver of claim 20, wherein said optoelectronic receiver includes an Avalanche Photodiode (APD), where said APD is electrically coupled to an APD power supply that is electrically coupled to said first controller IC, and where said first controller IC is configured to supply an APD power supply control signal to said APD power supply causing said APD power supply to supply an APD voltage to said APD.

22. (Original) The optoelectronic transceiver of claim 20, wherein said optoelectronic transmitter includes a Thermoelectric Cooler (TEC), where said TEC is electrically coupled to an TEC driver that is electrically coupled to said second controller IC, where said second controller IC is configured to supply a TEC control signal to said TEC driver causing said TEC driver to control said TEC.

23. (New) An optoelectronic transceiver, comprising:

a first controller integrated circuit (IC) and a second controller IC, each comprising: logic;

a memory configured to store digital diagnostic data, where at least some of said digital diagnostic data is common to both said first controller IC and said second controller IC;

an interface electrically coupled to said memory and configured for communicating said diagnostic data to a host external to said optoelectronic transceiver; and

at least one input port electrically coupled to said memory and configured to receive said diagnostic data from other components within said optoelectronic transceiver,

wherein said first controller IC further comprises at least one input port electrically coupled to: an Avalanche Photodiode (APD) power supply to receive a photodiode monitor signal; a post amplifier IC to receive a loss of received power (RxLOS) signal; and a laser driver IC to receive a direct current (DC) bias monitor signal and a laser diode monitor signal,

and wherein said second controller IC receives said photodiode monitor signal and said DC bias monitor signal via an analog to digital converter.